

Attorney Docket No. 1217.0002C

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of **Rolland N. Little**

Serial No.: **10/601,830**

Examiner: **L. Olson**

Confirmation No.: **9087**

Art Unit: **3617**

Filed: **June 23, 2003**

For: **Solar Charged, Electrically Driven Watercraft**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**TRANSMITTAL OF A PETITION FOR WITHDRAWAL OF THE HOLDING  
OF ABANDONMENT UNDER 37 CFR 1.181(a)**

Enclosed are the following documents in response to the Notice of Abandonment mailed October 26, 2004 for the above-identified application:

- ☒ Petition For Withdrawal of the Holding of Abandonment
- ☒ Copy of Postcard verifying 28 June 2004 filing of Response and IDS
- ☒ Copy of Transmittal Form for the Response filed on 28 June 2004
- ☒ Copy of the Amendment and Request for Reconsideration filed on 28 June 2004 in the USPTO
- ☒ A copy of the Petition for Extension of Time filed on 28 June 2004
- ☒ A copy of check #7818 in the amount of \$55 in payment of the extension of time fee
- ☒ A copy of check #7819 in the amount of \$174 in payment of excess claims filed on 28 June 2004
- ☒ Return receipt postcard

The fee has been calculated as follows:

	NO. OF CLAIMS	No. Previously Paid For	EXTRA CLAIMS	RATE	FEE
Total Claims	37	- 37 = 0	0	x \$18.00	0
Independent Claims	4	- 4 = 0	0	x \$84.00	0
If multiple dependent claims are presented, add \$280.00					0
Total Fees Due					0
<input type="checkbox"/> Applicant claims Small Entity Status (subtract 50% of Total Application Fee)					0
Other fees: (specify)					0
<b>TOTAL FEE DUE</b>					0

- ☐ A check for the total fee is attached.
- ☐ Please charge \$ \_\_\_\_\_ to Deposit Account No. 05-0460 for the total fee. This paper is being submitted in duplicate.
- ☒ The Commissioner is hereby authorized to charge any additional appropriate fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 05-0460.

Dated: October 29, 2004

**EDELL, SHAPIRO & FINNAN, LLC**  
**CUSTOMER NO. 27896**  
 1901 Research Boulevard, Suite 400  
 Rockville, MD 20850  
 (301) 424-3640

Respectfully submitted by  
**EDELL, SHAPIRO & FINNAN, LLC**

By: Michael E. Grendzynski  
 Michael E. Grendzynski  
 Reg. No. 54,790

Attorney Docket No. 1217.0002C

PATENT



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of **Rolland N. Little**

Serial No.: **10/601,830**

Examiner: **L. Olson**

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Art Unit: **3617**

Filed: **June 23, 2003**

For: **Solar Charged, Electrically Driven Watercraft**

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**PETITION FOR WITHDRAWAL OF THE HOLDING OF ABANDONMENT  
UNDER 37 CFR 1.181(a)**

Applicants hereby petition for the withdrawal of the holding of abandonment (mailed October 26, 2004). The holding of abandonment was predicated upon Applicants supposed failure to reply to the Office Action mailed 26 February 2004. However, Applicants filed a reply to the Office Action on 28 June 2004. As evidence of this filing, Applicants have enclosed copies of the following (all of which were filed in the USPTO on 28 June 2004):

- A copy of the postcard verifying 28 June 2004 filing;
- A copy of transmittal form for the response filed on 28 June 2004;
- A copy of the Amendment and Request for Reconsideration filed on 28 June 2004 in the USPTO;
- A copy of the Petition for Extension of Time filed on 28 June 2004
- A copy of check #7818 in the amount of \$55 in payment of the extension of time fee;
- A copy of check #7819 in the amount of \$174 in payment of excess claims filed on 28 June 2004

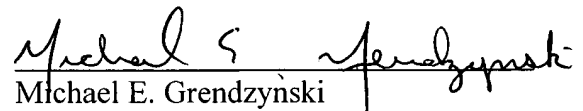
Because Applicants properly responded to the 26 February 2004 Office Action, Applicant hereby petitions for the withdrawal of the holding of abandonment (hand delivered 28 June 2004). Applicant also hereby requests an early action on the merits of the response filed in the USPTO on 28 June 2004. Should the Examiner have any questions, comments, or concerns regarding this application, the Examiner is kindly requested to contact the undersigned directly at (240) 864-2406.

Dated: October 29, 2004

**EDELL, SHAPIRO & FINNAN, LLC**  
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**EDELL, SHAPIRO & FINNAN, LLC**

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Reg. No. 54,790



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Appl. No.	:	10/601,830
Applicant	:	Rolland N. Little
Filed	:	June 23, 2003
TC/A.U.	:	3617
Examiner	:	Olson, Lars A.
Confirmation No.	:	9087
Docket No.	:	1217.0002C
Customer No.	:	27896
Title	:	Solar Charged, Electrically Driven Watercraft



COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The stamp of the U.S. Patent and Trademark Office placed hereon will indicate the date of receipt of the following:

Transmittal Letter (2 pages);

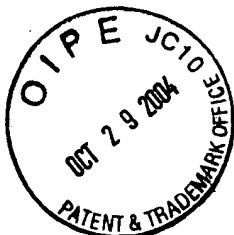
Amendment (26 pages);

Petition for Extension of Time;

Check #7819 in the amount of \$174.00 in payment of excess claims; and

Check #7818 in the amount of \$55.00 in payment of the extension of time fee.

Hand-delivered: June 28, 2004



**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No. : 10/601,830  
Applicant : Rolland N. Little  
Filed : June 23, 2003  
TC/A.U. : 3617  
Examiner : Olson, Lars A.  
Confirmation No. : 9087  
Docket No. : 1217.0002C  
Customer No. : 27896  
Title : Solar Charged, Electrically Driven Watercraft

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**TRANSMITTAL OF RESPONSE**

Enclosed are the following documents in response to the Office Action mailed February 26, 2004 for the above-identified application:

- ☒ Amendment/Response
- ☒ Petition for Extension of Time
- ☐ Request for Approval of Drawing Changes
- ☐ Information Disclosure Statement
- ☐ Notice of Appeal
- ☐ Associate Power
- ☐ Revocation and New Power
- ☐ Change of Address
- ☐ Return receipt postcard
- ☒ Check No. 7819 in the amount of \$174.00 for the total fee as calculated below
- ☒ Check No. 7818 in the amount of \$55.00 for the extension of time fee

The fee has been calculated as follows:

	NO. OF CLAIMS	PREVIOUSLY PAID FOR	EXTRA CLAIMS	RATE	FEE
Total Claims	28	23 - =	5	x \$18.00	90.00
Independent Claims	6	3 - =	3	x \$86.00	258.00
If multiple dependent claims are presented, add \$280.00					00.00
Total Amendment Fee					348.00
<input checked="" type="checkbox"/> Applicant claims Small Entity Status (subtract 50% of Total Application Fee)					174.00
Other fees: (specify)					00.00
TOTAL FEE DUE					174.00

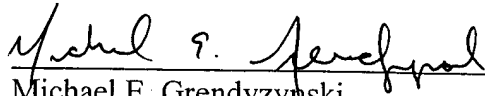
- ☒ A check for the total fee is attached.
- ☐ Please charge \$ to Deposit Account No. 05-0460 for the total fee. This paper is being submitted in duplicate.
- ☒ The Commissioner is hereby authorized to charge any additional appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 05-0460.

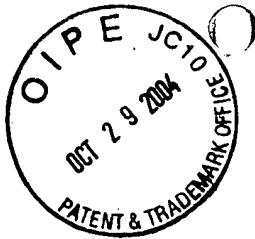
Dated: June 28, 2004

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Respectfully submitted by  
**EDELL, SHAPIRO & FINNAN, LLC**

By:

  
Michael E. Grendyzynski  
Reg. No. 54,790



**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No. : 10/601,803  
Applicant : Rolland N. Little  
Filed : June 23, 2003  
TC/A.U. : 3617  
Examiner : Olsen, Lars  
Confirmation No. : 9087  
Docket No. : 1217.0002C  
Customer No. : 27896  
Title : Solar Charged, Electrically Driven Watercraft

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT**

Sir:

In response to the Office Action mailed February 26, 2004, please amend the above-identified application as follows:

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Claims** are reflected in the listing of claims, which begins on page 3 of this paper.

**Remarks/Arguments** begin on page 9 of this paper.



**AMENDMENTS TO THE SPECIFICATION**

Please replace the paragraph beginning on page 10, line 22 and ending on page 11, line 3 with the following paragraph:

Referring back to FIG. 6, the box 40 preferably comprises a means for air outlet 48 (e.g., an air exhaust port) and a means for air inlet 46 (e.g., an air inlet port). The exhaust port 48 is located at either the front or the exterior front side of battery box 40. As shown in FIGS. 5b or 5d, when the external mounting configuration is used, exhaust port 48 is located at the lower portion of box 40. When the internal mounting configuration is used (FIGS. 5a, 5c), moreover, exhaust port 48 is located at the upper portion of box 40. In either configuration, inlet port 48 is preferably located on the rear side (i.e., the side closest to the stern of the watercraft) or the rear interior side of box 40. Locating the air inlet port 48 at the rear of box 40 and the exhaust port 46 at the front of box 40 takes advantage of the convection currents existing within box 40, especially when the craft possesses an aft orientation. Typically, the ports 46, 48 are lined with a fitting such as a polyvinyl chloride (PVC) fitting (not shown). The size of the ports is not limited, but is preferably about one to two inches in diameter. The ventilation manifold [[44]], present in the battery box, is discussed *infra*.

**AMENDMENTS TO CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) A solar-powered watercraft comprising  
a craft body including a deck;  
at least one pontoon having a centerline of flotation secured, said pontoon being disposed in depending relation from said body and comprising first and second sides, a forward terminal end toward which said sides taper and intersect at a forward terminal edge oriented perpendicularly to said deck, an intermediate portion, and an aft terminal end toward which said sides taper and intersect at an aft terminal edge oriented perpendicularly to said deck;  
a canopy secured to said body and disposed above said deck, wherein said canopy includes means for receiving solar radiation;  
at least one battery pack for powering said watercraft, wherein said pack is secured to said pontoon; and  
means for transferring energy from the solar reception means to the battery pack.
2. (original) The watercraft of claim 1, wherein the battery pack is mounted on an exterior surface of the pontoon.
3. (original) The watercraft of claim 1, wherein the battery pack is mounted at least partially inside the pontoon.
4. (original) The watercraft of claim 1, wherein the canopy further comprises a headliner disposed substantially parallel to and in vertically spaced relation from the solar reception means to define a ventilation space between the solar reception means and the headliner.

5. (original) The watercraft of claim 4, wherein the canopy further comprises means for flowing air through the ventilation space.
6. (currently amended) The watercraft of claim 5, wherein the airflow means comprises a fan connected in circuit to a ~~thermostatic switch~~ a photocell.
7. (original) The watercraft of claim 1, wherein said solar reception means comprises at least one solar panel.
8. (original) The watercraft of claim 7, wherein the solar panel comprises a non-flexible monocrystalline or polycrystalline module.
9. (currently amended) The watercraft of claim 1, wherein ~~the pontoon includes~~  
[[a]] said forward section including a terminal end, ~~wherein the terminal end has a~~  
~~taper defining~~ defines a water-cutting edge;  
~~an intermediate portion, wherein the~~ said intermediate portion includes the  
centerline of flotation; and  
[[an]] said sides at said aft section including a terminal end, wherein the terminal  
end has both a rearward taper and a downward taper both rearward and downward  
to converge to said aft terminal edge.
10. (original) The watercraft of claim 1 further comprising means for containing the battery pack located near the flotation centerline.
11. (original) The watercraft of claim 10, wherein the battery pack containing means comprises means for air inlet and means for air outlet.
12. (original) The watercraft of claim 1 wherein the means for transferring energy from the solar reception means to the battery pack comprises a control console secured above the deck.

13. (original) The watercraft of claim 12, wherein the control console comprises means for ventilating air.
14. (original) The watercraft of claim 13, wherein the air ventilation means comprises a fan connected in series to a thermostatic switch.
15. (original) The watercraft of claim 1, wherein the watercraft possesses an aft-oriented trim at rest or in motion.
16. (currently amended) A pontoon for a watercraft comprising
  - a first side and a second side;
  - a forward section having a terminal end;
  - an intermediate section including a flotation centerline;
  - an aft section having a terminal end; and
  - means for containing at least one battery pack secured to the intermediate section;
  - wherein, at said aft terminal end, said sides include a downward taper and a rearward taper converging and intersecting at an edge.
17. (original) The pontoon of claim 16, wherein the battery pack containing means is mounted on the exterior surface of the pontoon.
18. (original) The pontoon of claim 16, wherein the means for containing a battery pack is mounted at least partially inside the pontoon.
19. (original) The pontoon of claim 16, wherein the battery pack containing means comprises means for air inlet and means for air outlet.
20. (currently amended) The pontoon of claim 16, wherein the battery pack containing means ~~is located near~~ intersects the flotation centerline.
21. (canceled)

22. (canceled)
23. (canceled)
24. (new) A pontoon for a watercraft comprising
- a forward terminal end;
  - an intermediate portion including a vertical centerline of flotation, the centerline of flotation comprising a point along the pontoon located halfway between a forward point where the diameter is 75% of the full pontoon diameter and an aft point where the diameter is equal to or greater than 80% of the full pontoon diameter;
  - an aft terminal end; and
  - a bay configured to receive battery containing means.
25. (new) The pontoon of claim 24, wherein the pontoon bay intersects the centerline of flotation.
26. (new) The pontoon of claim 25 further including battery containing means secured to the battery bay.
27. (new) A solar-powered watercraft comprising
- a craft body including a deck;
  - at least one pontoon secured in depending relation from said body, said pontoon including
    - a centerline of flotation oriented perpendicular to said deck,
    - a bay comprising a recessed surface area on the pontoon, said bay positioned to intersect the centerline of flotation,
    - battery containing means at least partially positioned within said bay, said battery containing means including a means for air inlet and a means for air outlet;
    - a canopy secured to said body and disposed above said deck, wherein said canopy includes means for receiving solar radiation;

at least one battery pack for powering said watercraft, wherein said pack is contained within said battery containing means; and

means for transferring energy from the solar reception means to the battery pack.

28. (new) The watercraft of claim 27, wherein the centerline of flotation is a point along the pontoon located halfway between a forward point where the diameter is 75% of the full pontoon diameter and an aft point where the diameter is equal to or greater than 80% of the full pontoon diameter.

29. (new) A solar-powered watercraft comprising

a craft body including a deck;

at least one pontoon secured in depending relation from the body, the pontoon including

a container configured to house a battery pack, and

a bay configured to receive the container, wherein the container is secured to the bay;

a battery pack housed in the container;

a canopy secured to said body and disposed above said deck, said canopy including a panel operable to receive solar radiation; and

a control console operable to transfer energy from the solar panel to the battery pack;

wherein the control console further includes a ventilator configured to ventilate the battery pack container and the control console.

30. (new) A solar-powered watercraft comprising

a craft body including a deck;

at least one pontoon secured in depending relation from said body;

a canopy secured to said body and disposed above said deck, wherein said canopy includes

a frame comprising an open channel;

a headliner attached to the frame channel; and

a panel configured to receive solar radiation attached to said frame and disposed substantially parallel to and in vertically spaced relation from the headliner to define a ventilation space between the panel and the headliner, said panel positioned above the headliner such that the panel comprises the layer furthest from the deck;

a battery pack that powers the watercraft; and

a control console operable to transfer energy from the panel to the battery pack.

31. (new) The watercraft of claim 30, wherein the canopy further includes

means for flowing air through the ventilation space comprising a fan connected in circuit to a photocell, said photocell configured to make inoperable the fan when insufficient sunlight is present.

**REMARKS**

In the specification, the paragraph beginning on page 10, line 22 has been amended to correct a typographical problem.

Claims 1, 9, and 16 have been amended.

Claims 21, 22 and 23 have been canceled.

Claims 24-31 have been added.

Claims 1-20 and 24-31 are present in the subject application.

In the Office Action dated February 26, 2004, the Examiner rejected claims 16, 18 and 20-22 under 35 U.S.C. 102(b) and rejected claims 1-15, 17, 19 and 23 under 35 U.S.C. 103(a). Favorable reconsideration of the subject application is respectfully requested in view of the following remarks.

**Rejections under 35 U.S.C. §102(b)**

The Examiner has rejected claims 16, 18 and 20-22 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,000,353 (De Leu). Briefly, the De Leu patent discloses a pontoon raft having a hand-controlled steering mechanism and solar cells for powering an outboard electric motor. A seat of a chair having an adjustable back to form a raft interconnects a pair of pontoons to each other. Each pontoon has a flat, upward-facing surface used as an armrest, with one of the pontoons carrying a control panel. Both pontoons have photovoltaic cells located on the flat surfaces. The cells are connected either to a battery located within one of the pontoons or to the control panel. An electric motor with a propeller at the end of the vertical shaft is positioned rearward of the chair and is supported by a tube attached between the rear of the pontoons.



In contrast, the present invention is directed toward a solar powered watercraft including a pontoon section, a strut section, a body section, and a solar canopy section. The canopy section comprises a headliner layer, a ventilation space, and a panel that receives solar radiation. The pontoon section includes a pontoon having first and second sides, a forward terminal end, and an aft terminal end. The sides taper and intersect at one or both ends to form an edge (or edges) perpendicularly oriented to the body section. This configuration reduces water friction and wake. The pontoon further includes a recessed bay configured to receive a container that houses a battery pack. The container comprises a ventilation system that removes heat and gaseous byproducts from the container. The canopy comprises a frame to which solar panels and a headliner are attached. An area of ventilation exists between the headliner and panel layer. This area may be ventilated to remove hot gases and improve the performance of the panels.

The Examiner takes the position that the De Leu patent discloses all the features recited within the claims. This rejection, however, is respectfully traversed. Independent claim 16 has been amended to recite the features of a pontoon including an aft terminal end with sides that taper rearward (i.e., toward the aft portion) and downward, where these tapers converge and intersect at an edge. Dependent claims 21 and 22 have been canceled.

The De Leu patent does not disclose, teach, or suggest these features. Rather, the De Leu patent discloses a pontoon having a flat aft terminal end with a single, downward taper. *See* Figure 1. As can be seen, the front end of the pontoon does not include sides that taper rearward and downward to converge and intersect at an edge. Instead, it comprises rounded surface having a single, upward taper. Additionally, the aft end of the pontoon comprises a flat, slanted portion that extends from the top of the pontoon to the bottom of the pontoon (i.e., the part of the pontoon that contacts the water's surface). In other words, it includes a single, downward taper.

In contrast, the instant invention includes a pontoon having an aft terminal end including sides that taper rearward and downward to converge and intersect at an edge. This creates a water sealing edge that draws the water inward. This configuration reduces the surface area of water contacting the pontoon in comparison to a pontoon that lacks a dual taper, such as the one presented in the De Leu patent. Specifically, this configuration reduces drag and wake, regardless of the tilt of the watercraft. Thus, there is no disclosure, teaching, or suggestion of a pontoon for a watercraft including an aft terminal end with sides that taper downward and rearward to converge and intersect at an edge. Since the De Leu patent does not disclose, teach, or suggest the features recited within independent claim 16 as discussed above, this independent claim is considered to be in condition for allowance.

Claims 18 and 20 depend, either directly or indirectly, from independent claim 16 and, therefore, include all the limitations of their corresponding parent claim. These dependent claims are considered to be in condition for allowance at least for the same reasons discussed above in relation to their corresponding parent claims, and for further limitations recited in the claims.

Rejections under 35 U.S.C. §103(a)

The Examiner has rejected claims 1, 3, 7-10, 12, 13 and 15 under 35 U.S.C §103(a) as being unpatentable over U.S. Patent No. 5,931,114 (Bartholomew) in view of U.S. Patent No. 5,016,558 (Oehler) and U.S. Patent No. 6,000,353 (De Leu). Briefly, the Bartholomew patent discloses a boat top comprised of one or more rigid panel members. Attached to the bottom face of the panel members is system including a series of T-tracks and body members that are adapted to slide along the tracks. The body members further include an adapter clip extending therefrom.

This system enables easy attachment and removal of the top from a boat. In addition, various accessories can be attached to either the top face or the bottom face of the boat top, such as a solar cell that can be used to charge the boat battery.

Next, the Oehler patent discloses a retractable roof for a boat. The boat comprises a catamaran boat including a body with fore and aft terminal ends. Two pontoons are disposed below the body. A generally horizontal roof is disposed above the body. The roof includes a plurality of rigid, lightweight frame bars carrying a cover. The frame is retractable to enable a user to diminish the height of the roof, thus permitting the boat to pass under an obstacle having low clearance. Finally, the De Leu patent discloses a solar powered raft as described above.

In contrast, the instant invention is directed toward a solar powered watercraft including a pontoon with sides that intersect and converge at an edge oriented perpendicular to the body of the watercraft as described above. The Examiner takes the position that it would be obvious to use the pontoon of the Oehler patent (as shown in Figures 1-3), secure a battery therein (as shown in Figures 1-2 of the De Leu patent), and then integrate the pontoon-with-battery system into the boat of the Bartholomew patent (as shown in Figures 1-2) including a removable roof and optional solar panel accessory. This rejection, however, is respectfully traversed. Independent claim 1 has been amended to recite the features of a pontoon including a first side, a second side, a forward terminal end, a center portion, and an aft terminal end, wherein the sides at each of the terminal ends intersect and converge to an edge oriented perpendicular to the deck.

None of the Bartholomew, Oehler, or De Leu patents disclose, teach, or suggest these features. Rather, Oehler and De Leu disclose pontoons having rounded forward terminal ends and flat aft terminal ends. In addition, Bartholomew discloses a boat including a hull, not pontoons. Specifically, as shown in Figure 1, the Oehler patent discloses a pontoon including a

flat aft terminal end and a rounded forward terminal end. The pontoon does not include terminal edges that taper to edge oriented perpendicular to the deck of the watercraft. Furthermore, De Leu, in Figure 1, discloses a pontoon including a rounded forward terminal end and a flat, slanted aft terminal edge. The aft terminal edge slants from the top of the pontoon to the bottom of the pontoon (i.e., the part of the pontoon that contacts the water's surface). In contrast, the instant invention includes a pontoon with first and second sides, a forward terminal end toward which said sides taper and intersect at a forward terminal edge, and an aft terminal end toward which said sides taper and intersect at an aft terminal edge, wherein both the forward and aft edges are oriented perpendicularly to the deck of the watercraft. The forward terminal end creates a water cutting edge that divides the water, while aft terminal end creates a water sealing edge that draws the water inward. This configuration reduces the surface area of water contacting the pontoon when compared to a pontoon that lacks this configuration, such as the one presented in the Oehler and De Leu patents. Thus, there is no disclosure, teaching or suggestion of a watercraft including a deck supported above a pontoon, wherein the pontoon includes first and second sides that taper at terminal ends to converge and intersect at an edge oriented perpendicularly to the deck.

Additionally, there is no disclosure in any of the Bartholomew, Oehler, or De Leu patents providing proper motivation for combining the references as asserted in the Examiner's position. Bartholomew does not disclose, teach, or suggest that the hull of its boat may be replaced with a pontoon structure; moreover, there is no motivation provided in Oehler for adding pontoons to a hulled watercraft. Furthermore, De Leu does not disclose, teach or suggest that placing a battery in one pontoon of a raft including a chair disposed between two pontoons, wherein the pontoon is designed for pool use (not open water), will provide more stability to the raft. It, moreover,

does not disclose, teach, or suggest that placing a battery in a pontoon will stabilize a full-sized watercraft such as that disclosed in Oehler including a deck disposed above (not between) pontoons and designed for open water. The placement of a battery in one pontoon, in fact, would serve to destabilize the raft, particularly with regard to waves approaching from the sides of the craft.

Since the Oehler, Bartholomew, and De Leu patents do not disclose, teach, or suggest the features recited within independent claim 1 as discussed above, this independent claim is considered to be in condition for allowance.

Claims 3, 7-10, 12, 13, and 15 depend, either directly or indirectly, from independent claim 1 and, therefore, include all the limitations of their corresponding parent claim. Furthermore, none of the cited references teach or suggest the features of a monocrystalline or polycrystalline solar panel as recited in claim 8, a pontoon having an aft terminal end with sides that taper downward and rearward to converge at an edge as recited in claim 9, a centerline of flotation as recited in claim 10, a control console including ventilation means as recited in claim 13, or an aft oriented trim as recited in claim 15. Examiner takes the position that an aft oriented trim results from the placement of the battery at the stern of the raft in the De Leu patent. However, an aft oriented trim is not taught or suggested. In addition, any weight displacement caused by the placement of battery near the stern of one pontoon would be offset by the weight of the control panel located near the front of the starboard pontoon, the weight of the television and other entertainment items located near the front of the port pontoon, and the solar panels disposed near the front of both pontoons.

Claims 3, 7-10, 12, 13, and 15 are considered to be in condition for allowance for at least the same reasons discussed above in relation to their corresponding parent claims, and for further limitations recited in the claims.

The Examiner has rejected claim 2 under 35 U.S.C §103(a) as being unpatentable over U.S. Patent No. 5,931,114 (Bartholomew) in view of U.S. Patent No. 5,016,558 (Oehler) and U.S. Patent No. 6,000,353 (De Leu), in further view of U.S. Patent No. 6,263,826 (Key). Briefly, the Bartholomew patent discloses a removable boat top as described above, the De Leu patent discloses a solar powered raft as described above, and the Oehler patent discloses a retractable roof for a boat as described above. The Key patent discloses a sprinkler for a boat canopy. The canopy is held in place by a frame including an upper member that is supported by lateral frame members attached to the sides of boat. The frame members define a hollow interior channel that provides a passageway along the interior of the frame. The canopy frame further includes an opening to which a nozzle is attached. The free end of the nozzle is configured to direct streams of water upwardly into the air. The water streams are generated using a pump connected to a battery, both of which are located on the deck of the boat. In contrast, the instant invention is directed toward a solar powered watercraft including shaped pontoons as described above.

The Examiner takes the position that it would be obvious to modify the combined references of Bartholomew, De Leu, and Oehler by attaching a battery pack to the exterior of a pontoon as shown in Figure 1 of the Key patent. This rejection, however, is respectfully traversed. Initially, this claim depends, either directly or indirectly, from independent claim 1 and, therefore, includes all the limitations of its corresponding parent claim. As discussed above, the Bartholomew, De Leu, or Oehler patents do not disclose, teach, or suggest the features of a

watercraft including a deck disposed above a pontoon, wherein the pontoon includes first and second sides, a forward terminal end toward which said sides taper and intersect at a forward terminal edge, and an aft terminal end toward which said sides taper and intersect at an aft terminal edge, wherein both the forward and aft edges are oriented perpendicularly to the deck of the watercraft as recited in the claims. Thus, these claims are considered to be in condition for allowance for at least the same reasons discussed above in relation to their parent claims, and for further limitations recited in the claims.

The Key patent does not compensate for the deficiencies of the Bartholomew, De Leu, and Oehler patents and similarly does not disclose, teach, or suggest these features. Rather, it discloses a battery mounted to the deck of a boat including pontoons with flat aft terminal edges. *See Figures 1 and 4.* As can be seen, the aft terminal edges of the boat pontoons are flat. They do not include an edge oriented perpendicularly to deck of the boat. The battery, moreover, is mounted to the deck of the boat and not to the exterior surface of a pontoon as asserted. Consequently, there is no disclosure, teaching or suggestion of a watercraft including (1) a pontoon with first and second sides tapering and intersecting at edges oriented perpendicularly to the deck of the watercraft or, for that matter, (2) a battery pack mounted to the exterior of the pontoon as recited in the claims.

Since the Bartholomew, De Leu, Oehler, and Key patents do not disclose, teach or suggest, either alone or in combination, the features recited in claim 2 as discussed above, this claim is considered to be in condition for allowance

The Examiner has rejected claims 4-6 under 35 U.S.C §103(a) as being unpatentable over U.S. Patent No. 5,931,114 (Bartholomew) in view of U.S. Patent No. 5,016,558 (Oehler) and U.S. Patent No. 6,000,353 (De Leu), in further view of U.S. Patent No. 5,725,062 (Fronek).

Briefly, the Bartholomew patent discloses a removable boat top, the De Leu patent discloses a solar powered raft, and the Oehler patent discloses a retractable roof for a boat, each as described above. The Fronek patent discloses a solar power generator that attaches to the top of a vehicle such as a golf cart or boat. It includes a frame with solar panels attached thereto. The frame further includes mounting brackets to enable the frame's attachment to the rooftop of a vehicle. A protective cover is placed over the solar panels to protect the panels from dust, etc. A space exists within the photovoltaic frame (between the panels and the bottom of the frame), as well as between the frame and the vehicle top. Attached to the bottom of the frame is a cooling fan that generates a flow of air over the surfaces of the solar panels and between the vehicle top and the photovoltaic frame. In contrast, the instant invention is directed toward a solar powered watercraft including shaped pontoons as described above.

The Examiner takes the position that it would be obvious to modify the combined patents of Bartholomew, De Leu, and Oehler by incorporating the solar power generator as shown in Figure 1 and column 3 of Fronek. This rejection, however, is respectfully traversed. Initially, these claims depend, either directly or indirectly, from independent claim 1 and, therefore, include all the limitations of their corresponding parent claim. As discussed above, the Bartholomew, De Leu, and Oehler patents do not disclose, teach, or suggest the features of a watercraft including a deck disposed above a pontoon, wherein the pontoon includes first and second sides, a forward terminal end toward which said sides taper and intersect at a forward terminal edge, and an aft terminal end toward which said sides taper and intersect at an aft terminal edge, wherein both the forward and aft edges are oriented perpendicularly to the deck of the watercraft as recited in the claims. Thus, these claims are considered to be in condition for



allowance for at least the same reasons discussed above in relation to their parent claim, and for further limitations recited in the claims.

Fronek does not compensate for the deficiencies of the Bartholomew, De Leu, and Oehler patents and similarly does not disclose, teach or suggest these features. Rather, the Fronek patent discloses a solar power generator including mounting brackets that enable the frame of the generator to be attached to the rooftop of a vehicle (e.g., See Column 2, lines 46 to 53). The generator does not comprise the canopy of the vehicle; instead, it is an accessory that requires a vehicle top (i.e., a canopy) for its use. *See, e.g.*, col. 3, lines 5-17. In contrast, the current invention is directed towards a solar canopy that comprises the roof structure of the vehicle, i.e., it does not require a rooftop for its use. The vehicle top disclosed by Fronek, moreover, does not include a headliner layer and solar panels attached to a frame as recited in the claims. Consequently, there is no disclosure, teaching or suggestion of a watercraft including a pontoon comprising terminal ends with sides that taper to converge and intersect at an edge oriented perpendicularly to the deck of the watercraft or, for that matter, a battery pack mounted to the exterior of a pontoon, wherein the battery is connected to a canopy including a headliner, a ventilation space, and a solar panel as recited in the claims. Since the Bartholomew, De Leu, Oehler, and Fronek patents do not disclose, teach or suggest, either alone or in combination, the features recited in claims 4-6 as discussed above, these claims are considered to be in condition for allowance.

The Examiner has rejected claims 11 and 14 under 35 U.S.C §103(a) as being unpatentable over U.S. Patent No. 5,931,114 (Bartholomew) in view of U.S. Patent No. 5,016,558 (Oehler) and U.S. Patent No. 6,000,353 (De Leu), in further view of U.S. Patent No. 4,991,532 (Locke). Briefly, the Bartholomew patent discloses a removable boat top as described

above. The De Leu patent discloses a solar powered raft as described above. The Oehler patent discloses a retractable roof for a boat as described above. The Locke patent discloses an automatic fan controller that energizes a ventilation fan motor to eliminate fuel fumes from an engine compartment located in the hull of a motorboat. The controller includes a relay that provides electrical power to the motor of the fan. The relay, in turn, is controlled by an electronic circuit responsive to engine ignition circuit pulses that operates the fan whenever the engine speed is below a desired value. Additionally, a temperature-controlled switch may be provided to energize the relay and energize the fan motor. In contrast, the instant invention is directed toward a solar powered watercraft including shaped pontoons as described above.

The Examiner takes the position that it would be obvious to modify the combined patents of Bartholomew, De Leu, and Oehler by adding the engine ventilation system shown in Locke Figure 1, to prevent the accumulation of fumes within a container housing the battery pack. This rejection, however, is respectfully traversed. Initially, these claims depend, either directly or indirectly, from independent claim 1 and, therefore, include all the limitations of its corresponding parent claim. As discussed above, the Bartholomew, De Leu, or Oehler patents do not disclose, teach, or suggest the features of a watercraft including a deck disposed above a pontoon, wherein the pontoon includes first and second sides, a forward terminal end toward which said sides taper and intersect at a forward terminal edge, and an aft terminal end toward which said sides taper and intersect at an aft terminal edge, wherein both the forward and aft edges are oriented perpendicularly to the deck of the watercraft as recited in the claims. Thus, these claims are considered to be in condition for allowance for at least the same reasons discussed above in relation to their parent claim and for further limitations recited in the claims.

Locke does not compensate for the deficiencies of the Bartholomew, De Leu, and Oehler patents and similarly does not disclose, teach or suggest these features. Specifically, the Locke patent does not disclose a battery ventilation system for use in a container mounted to a pontoon. Rather, the Locke patent discloses a hulled boat including an engine compartment with a fan that generates a flow of air whenever the engine speed is below a certain level or whenever the engine temperature reaches a certain level (e.g., See Column 1, line 50 to Column 4, line 25). One skilled in the art would not place the entire engine compartment in the pontoon structures shown in De Leu or Oehler. In addition, Locke does not disclose, teach, or suggest that its ventilation system functions to vent gaseous byproducts formed by a battery. As such, there is no disclosure, teaching or suggestion of a watercraft including a pontoon comprising terminal ends that taper to an edge oriented perpendicularly to the deck of the watercraft or, for that matter, a battery pack positioned near the flotation centerline of a pontoon, wherein battery pack is housed in a container that includes an air inlet and an air outlet as recited in the claims. Additionally, claim 14 does not depend from claim 11; consequently, the air ventilation means does not further limit the battery back containing means as recited in claim 11.

Since the Bartholomew, De Leu, Oehler, and Locke patents do not disclose, teach or suggest, either alone or in combination, the features recited in claims 11 and 14 as discussed above, these claims are considered to be in condition for allowance.

The Examiner has rejected claim 17 under 35 U.S.C §103(a) as being unpatentable over U.S. Patent No. 6,000,353 (De Leu) in view of U.S. Patent No. 6,263,826 (Key). Briefly, the De Leu patent discloses a solar powered raft as described above. The Key patent discloses a sprinkler system for a boat canopy as described above. In contrast, the instant invention is

directed toward a pontoon including an aft terminal end with rearward and downward tapers that converge to an edge as described above.

It is the examiner's position that it would be obvious to modify the raft shown in Figure 1 of De Leu by mounting a battery pack to the exterior surface of a pontoon as shown in Figure 1 of the Key patent for the purpose of facilitating the installation of the battery pack on said pontoon. This rejection, however, is respectfully traversed. Initially, this claim depends, either directly or indirectly, from independent claim 16 and, therefore, includes all the limitations of its corresponding parent claim. As discussed above, De Leu does not disclose, teach or suggest a pontoon for a watercraft including an aft terminal end with sides that taper downward and rearward to converge and intersect at an edge. Thus, this claim is considered to be in condition for allowance for at least the same reasons discussed above in relation to its parent claim, and for further limitations recited in the claim.

The Key patent does not compensate for the deficiencies of the De Leu patent and similarly does not disclose, teach or suggest these features. Rather, it discloses a battery mounted to the deck of a boat including pontoons with flat aft terminal edges. *See* Figures 1 and 4. As can be seen, the aft terminal edges of the boat pontoons are flat. They do not include sides that taper rearward and downward to converge at an edge. The battery, moreover, is mounted to the deck of the boat and not to the exterior surface of a pontoon as asserted. Consequently, there is no disclosure, teaching or suggestion of a watercraft including (1) a pontoon with first and second sides including an aft terminal end wherein the sides taper rearward and downward to converge at an edge or, for that matter, (2) a battery pack mounted to the exterior of the pontoon as recited in the claims.

Since the De Leu and Key patents do not disclose, teach or suggest, either alone or in combination, the features recited in claim 17 as discussed above, this claim is considered to be in condition for allowance.

The Examiner has rejected claim 19 under 35 U.S.C §103(a) as being unpatentable over U.S. Patent No. 6,000,353 (De Leu) in view of U.S. Patent No. 4,991,532 (Locke). Briefly, the De Leu patent discloses a solar powered raft as described above. The Locke patent discloses an automatic controller for a ventilation fan used in an engine compartment as described above. In contrast, the instant invention is directed toward a pontoon for a watercraft including a dual tapered aft terminal end as described above.

It is the Examiner's position that it would have been obvious to modify the raft of De Leu as shown in Figure 1 by adding the engine ventilation system shown in Figure 1 of Locke for the purpose of providing ventilation to prevent the accumulation of fumes within the pontoon housing the battery pack. This rejection, however, is respectfully traversed. Initially, this claim depends, either directly or indirectly, from independent claim 16 and, therefore, includes all the limitations of its corresponding parent claim. As discussed above, De Leu does not disclose, teach or suggest a pontoon for a watercraft including an aft terminal end with sides that taper downward and rearward to converge and intersect at an edge. Thus, this claim is considered to be in condition for allowance for at least the same reasons discussed above in relation to its parent claim, and for further limitations recited in the claim.

Locke does not compensate for the deficiencies of the De Leu patent and similarly does not disclose, teach or suggest these features. The Locke patent does not disclose a battery ventilation system for use in a battery container mounted on a pontoon. Rather, the Locke patent discloses a hulled boat including an engine compartment with a fan that generates a flow of air

whenever the engine speed is below a certain level, or whenever the engine temperature reaches a certain level (e.g., See Column 1, line 50 to Column 4, line 25). One skilled in the art would not place an entire engine compartment into the pontoon structures shown in De Leu or Oehler. In addition, Locke does not disclose, teach, or suggest that its ventilation system also is useful in venting gaseous byproducts formed by a battery. Thus, there is no disclosure, teaching or suggestion of a watercraft including a pontoon comprising a first side and a second side, wherein the sides of the aft terminal end taper rearward and downward to intersect at an edge or, for that matter, a battery pack mounted to the a pontoon, wherein the container that houses the battery pack includes ventilation ports as recited in the claims. Since the De Leu and Key patents do not disclose, teach or suggest, either alone or in combination, the features recited in claim 17 as discussed above, these claims are considered to be in condition for allowance.

In addition to the foregoing, it would not be obvious to combine the Bartholomew patent with the De Leu, Oehler, Key, Fronek, or Locke patents to obtain the claimed invention. Briefly, the Bartholomew patent discloses a removable boat top as described above, while the De Leu patent discloses a raft as described above. The Bartholomew patent is concerned with providing a boat top that can be attached to various types of full-sized watercrafts, disclosing only hulled boats. The Oehler patent is directed toward a retractable roof for a pontoon boat as described above, and is concerned with enabling a boat to pass below obstacles having low clearance (such as bridges). It is not concerned with adding solar cells to a boat top or modifying a hulled ship by replacing the hull with pontoons. Thus, these patents are concerned with divergent teachings and there is no apparent reason to combine those teachings other than prohibited hindsight derived from Applicants' own disclosure. In addition, one skilled in the art would not look to alter the hulled structure disclosed by Bartholomew with the pontoon structure of Oehler.

Neither patent includes appropriate motivation for doing so. Accordingly, the proposed combination of the Bartholomew and Oehler patents does not tender the claimed invention obvious.

The De Leu patent is directed toward an open-top, solar-powered raft including a chair positioned between two pontoons as described above. It is concerned with providing a single-person raft for use in a pool and having limited power capacity. It is not concerned with providing a power system for full-sized boats that navigate open waters such as lakes. Thus, these patents are concerned with divergent teachings and there is no apparent reason to combine those teachings other than prohibited hindsight derived from Applicants' own disclosure. Accordingly, the proposed combination of the Bartholomew, Oehler, and De Leu patents does not tender the claimed invention obvious.

The Fronek patent discloses a solar power generator as described above. It employs brackets that enable attachment of the generator to the rooftop of a variety of vehicles. It is concerned with providing an accessory that attaches to the roof of a vehicle, and not with functioning as the roof of the vehicle itself (i.e., as the canopy). Consequently, one skilled in the art would not be motivated to replace the roof structures of the Bartholomew or Oehler patents with the attaching accessory disclosed by Fronek. These patents are concerned with divergent teachings and there is no apparent reason to combine those teachings other than prohibited hindsight derived from Applicants' own disclosure. Accordingly, the proposed combination of the Bartholomew, Oehler, De Leu, and Fronek patents does not tender the claimed invention obvious.

The Locke patent discloses an engine compartment for a motorboat as described above. This patent employs a fan to ventilate the compartment whenever certain conditions are met e.g.,

when the engine speed drops below a certain level or the temperature in the compartment rises above a certain level. It is concerned with removing gases from the engine compartment of a hulled ship caused by the running of the engine. There is no mention of or concern for battery fume ventilation. Furthermore, neither the Bartholomew patent nor the Oehler patent discloses, teaches, or suggests the desirability of providing ventilation to its engines. Bartholomew and Oehler are both directed toward boat tops. Thus, these patents are directed toward divergent teachings and there is no apparent reason to combine those teachings absent prohibited hindsight derived from Applicants' own disclosure. Moreover, one skilled in the art would not look to the engine compartment ventilation system of Locke to modify the structures of Bartholomew or De Leu, which do not include engine compartments (i.e., both disclose open-air motors), or to modify the structure of Oehler, which does not disclose, teach or suggest the existence of an engine or an engine compartment. Accordingly, the proposed combination of the Locke, Oehler, De Leu, and Bartholomew patents does not tender the claimed invention obvious.

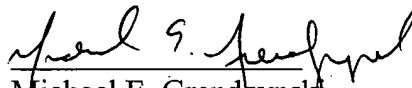
The Key patent discloses a pontoon boat including a sprinkler system as described above. The patent employs a pump located on the deck of the boat to propel water through the sprinkler and is not concerned with providing a boat with a removable top. Thus, the Bartholomew and Key patents are directed toward divergent teachings and there is no apparent reason to combine those teachings absent prohibited hindsight derived from Applicants' own disclosure. In addition, one of ordinary skill in the art would not be motivated to modify the structure of Bartholomew, Oehler, or De Leu by placing a battery on the pontoon of Oehler, since none of the references teach placing a battery on a pontoon. Accordingly, the proposed combination of the Key, De Leu, and Bartholomew patents does not tender the claimed invention obvious.



New claims 24-31 include further features not disclosed in any of the cited references. Specifically, none of the references include the feature of pontoon including a vertical centerline of flotation comprising a point along the pontoon located halfway between a forward point where the diameter is 75% of the full pontoon diameter and an aft point where the diameter is equal to or greater than 80% of the full pontoon diameter (claims 24, 25, and 28); a pontoon including a battery bay configured to receive a container that houses a battery pack, wherein the battery pack intersects the pontoon's centerline of flotation (claims 27); a control console located on the deck of a watercraft including a fan that ventilates both the control console and the container mounted to a pontoon that houses a battery (claim 29); or a canopy including a frame with an open channel and, attached thereto, an uppermost solar panel layer and a lower headliner layer, wherein the headliner layer is attached to the open channel and wherein a ventilation space exists between the solar panel layer and the headliner layer (claims 30-31).

The application, having been shown to overcome issues raised in the Office Action, is considered to be in condition for allowance and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

  
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Hand-delivered: June 28, 2004

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No. : 10/601,830  
Applicant : Rolland N. Little  
Filed : June 23, 2003  
TC/A.U. : 3617  
Examiner : Olson, Lars A.  
Confirmation No. : 9087  
Docket No. : 1217.0002C  
Customer No. : 27896  
Title : Solar Charged, Electrically Driven Watercraft

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**PETITION FOR EXTENSION OF TIME**

Sir:

The following one-month extension of time is requested to respond to the Office Action dated February 26, 2004, from May 26, 2004 to June 26, 2004, the extension fee is:

☒ \$55.00      ☐ \$110.00

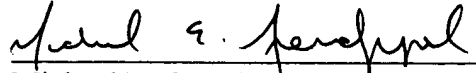
- ☒ An extension fee in the amount of \$55.00 is enclosed.
- ☐ The shortened statutory period has been reset by an Advisory Action dated
- ☐ Charge \$      to Deposit Account No. 05-0460.
- ☒ The Commissioner is hereby authorized to charge any additional appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to      Deposit Account No. 05-0460. This paper is submitted in duplicate.

Dated: June 28, 2004

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Respectfully submitted by  
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By:

  
\_\_\_\_\_  
Michael E. Grendyzynski  
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EDELL, SHAPIRO, FINNAN & LYTLE, LLC

PATENT & TRADEMARK OFFICE ACCOUNT

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ROCKVILLE, MD 20850

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65-233-550

The Director of the United States Patent and Trademark Office

DATE

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FOR

1217.0002C

*Michael S. Shapiro*

MP

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EDELL, SHAPIRO, FINNAN & LYTLE, LLC

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ROCKVILLE, MD 20850

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